

We Claim:

1. A method for determining at least one critical path of an integrated circuit limiting a processing speed of the integrated circuit, which comprises:
 - a) determining paths provided in the integrated circuit, mean path transit times of the paths, and path transit time fluctuations of the paths;
 - b) ordering the paths to form a path group with the paths having substantially an identical mean path transit time and an identical path transit time fluctuation;
 - c) calculating a group figure for each path group, the group figure statistically describing the path transit time distribution of a respective path group;
 - d) calculating a total figure for a totality of the paths considered, the total figure statistically describing the path transit time distribution of the totality of the paths considered; and
 - e) determining the at least one critical path of the integrated circuit by comparing the group figures at least as great as a critical path transit time determined by taking into consideration the total figure.

2. The method according to claim 1, which further comprises, in step e), predetermining a value for the total figure and determining the critical path transit time as the path transit time at which the total figure assumes the predetermined value.

3. The method according to claim 1, which further comprises determining as critical paths the paths having group figures exceeding a predeterminable threshold value at least as great as the critical path transit time.

4. The method according to claim 2, which further comprises determining as critical paths the paths having group figures exceeding a predeterminable threshold value at least as great as the critical path transit time.

5. The method according to claim 1, which further comprises, after step a), discarding all the paths having the mean path transit time less than $\alpha \times T_m$, where T_m is the maximum mean path transit time determined in step a) and α is a quantity of less than 1.

6. The method according to claim 1, which further comprises, after step a), discarding all the paths having the mean path

transit time less than $\alpha \times T_m$, where T_m is the maximum mean path transit time determined in step a) and α is a quantity equal to approximately 0.8.

7. The method according to claim 1, which further comprises, after step a), discarding all the paths having the mean path transit time less than $\alpha \times T_m$, where T_m is the maximum mean path transit time determined in step a) and α is a quantity of less than approximately 0.8.

8. The method according to claim 1, which further comprises:

defining the group figure by an integral over a sum of probability distributions of the path transit times of the paths of the path group considered; and

for calculating the sum of the probability distributions, forming a product of the number of paths of the path group and the probability distribution of one path of the path group.

9. The method according to claim 1, which further comprises defining the total figure by a sum of the group figures.

10. A method for determining at least one critical path of an integrated circuit limiting a processing speed of the integrated circuit, which comprises:

first, determining paths provided in the integrated circuit, mean path transit times of the paths, and path transit time fluctuations of the paths;

second, ordering the paths to form a path group with the paths having substantially an identical mean path transit time and an identical path transit time fluctuation;

third, calculating a group figure for each path group, the group figure statistically describing the path transit time distribution of a respective path group;

fourth, calculating a total figure for a totality of the paths considered, the total figure statistically describing the path transit time distribution of the totality of the paths considered; and

fifth, determining the at least one critical path of the integrated circuit by comparing the group figures at least as great as a critical path transit time determined by taking into consideration the total figure.

11. The method according to claim 10, which further comprises, in step e), predetermining a value for the total figure and determining the critical path transit time as the path transit time at which the total figure assumes the predetermined value.

12. The method according to claim 10, which further comprises determining as critical paths the paths having group figures exceeding a predeterminable threshold value at least as great as the critical path transit time.

13. The method according to claim 11, which further comprises determining as critical paths the paths having group figures exceeding a predeterminable threshold value at least as great as the critical path transit time.

14. The method according to claim 10, which further comprises, after step a) and before step b), discarding all the paths having the mean path transit time less than $\alpha \times T_m$, where T_m is the maximum mean path transit time determined in step a) and α is a quantity of less than 1.

15. The method according to claim 10, which further comprises, after step a) and before step b), discarding all the paths having the mean path transit time less than $\alpha \times T_m$,

where T_m is the maximum mean path transit time determined in step a) and α is a quantity equal to approximately 0.8.

16. The method according to claim 10, which further comprises, after step a) and before step b), discarding all the paths having the mean path transit time less than $\alpha \times T_m$, where T_m is the maximum mean path transit time determined in step a) and α is a quantity of less than approximately 0.8.

17. The method according to claim 10, which further comprises:

defining the group figure by an integral over a sum of probability distributions of the path transit times of the paths of the path group considered; and

for calculating the sum of the probability distributions, forming a product of the number of paths of the path group and the probability distribution of one path of the path group.

18. The method according to claim 10, which further comprises defining the total figure by a sum of the group figures.

19. A method for determining at least one critical path of an integrated circuit limiting a processing speed of the integrated circuit, which comprises:

- a) determining paths provided in the integrated circuit, mean path transit times of the paths, and path transit time fluctuations of the paths;
- b) ordering the paths to form a path group with the paths having a substantially identical mean path transit time and a substantially identical path transit time fluctuation;
- c) calculating a group figure for each path group, the group figure statistically describing the path transit time distribution of a respective path group;
- d) calculating a total figure for a totality of the paths considered, the total figure statistically describing the path transit time distribution of the totality of the paths considered; and
- e) determining the at least one critical path of the integrated circuit by comparing the group figures at least as great as a critical path transit time determined by taking into consideration the total figure.